JPDO Paper

Defining an Interagency Mechanism to Achieve NextGen Integrated Surveillance

Paper No.: 08-006   **July 15, 2008**

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JPDO partner departments and agencies for the Next Generation Air Transportation System (NextGen) are investing considerable resources, time, and energy in developing surveillance, navigation, telecommunications and the resulting information research and technology to enable surveillance operations within their own core domains. However, a lack of networking and integration among the different agency activities is expected to result in duplication, gaps, and inefficiency that will impede or prevent the achievement of the integrated surveillance capabilities envisioned in the NextGen Concept of Operations.

How to best address the overlapping surveillance and data integration responsibilities, capabilities, and authorities of the U.S. Government air security and safety partners have yet to be answered. Additional sensors, processes, and procedures, coordinated amongst DHS, DoD, Office of the Director of National Intelligence, FAA, and other national and international air security partners, will be necessary for information sharing to establish the intent and detection of unknown, suspected, or actual airborne threats to the United States.

The Integrated Surveillance Study Team Interim Report's first recommendation is critical: determine a formal, institutionalized interagency mechanism for responsibility, management, and ownership for elements of integrated surveillance (to include funding). Future national aviation surveillance data/information requirements must be analyzed holistically, ensuring that the responsibilities of the FAA, DHS, DoD, Office of the Director of National Intelligence, DOC/NOAA, and other aviation safety and security partners are addressed.

1. REPORT DATE **15 JUL 2008**	2. REPORT TYPE	3. DATES COVERED **00-00-2008 to 00-00-2008**
4. TITLE AND SUBTITLE **Defining an Interagency Mechanism to Achieve NextGen Integrated Surveillance**		5a. CONTRACT NUMBER
		5b. GRANT NUMBER
		5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)		5d. PROJECT NUMBER
		5e. TASK NUMBER
		5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Joint Planning and Development Office,1500 K Street NW Suite 500 ,Washington,DC,20005**		8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSOR/MONITOR'S ACRONYM(S)
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)
12. DISTRIBUTION/AVAILABILITY STATEMENT **Approved for public release; distribution unlimited**		
13. SUPPLEMENTARY NOTES		
14. ABSTRACT		
15. SUBJECT TERMS		

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**	**Same as Report (SAR)**	**4**	

Defining an Interagency Mechanism to Achieve NextGen Integrated Surveillance

Multiple departments and agencies have a need for aviation transportation system[1] surveillance information and have existing resources and planned programs to meet their mission needs: the FAA for administering the National Airspace System (NAS), DHS for transportation security, DoD for homeland defense, and the DOC for weather information and forecasting. JPDO partner departments and agencies for the Next Generation Air Transportation System (NextGen) are investing considerable resources, time, and energy in developing surveillance, navigation, telecommunications and the resulting information research and technology to enable surveillance operations within their own core domains. DOT/FAA is concentrating on fielding Automatic Dependent Surveillance–Broadcast (ADS-B), which can provide NextGen cooperative surveillance capability; DHS and DoD are concentrating on expending resources supporting air surveillance; and DoD and DOC are funding research and development on future radar and surveillance sensor systems. However, a lack of networking and integration among these different agency activities is expected to result in duplication, gaps, and inefficiency that will impede or prevent the achievement of the integrated surveillance capabilities envisioned in the NextGen Concept of Operations (ConOps).

During its investigation, the Integrated Surveillance Study Team (ISST) has found that each represented department or agency has begun analytic efforts that have led, or will lead, to the identification of its respective future surveillance and data integration requirements. However, these efforts are not as synchronized as they might be and questions of how to best address the overlapping surveillance and data integration responsibilities, capabilities, and authorities of the U.S. Government air security and safety partners have yet to be answered. While ADS-B considerably enables enhanced, current interagency safety and security capabilities, it is not capable of providing reliable information on the intent of unlawful operators, including criminals and terrorists operating airborne platforms in the NAS. As a result, additional sensors, processes, and procedures, coordinated amongst DHS, DoD, Office of the Director of National Intelligence (ODNI), FAA, and other national and international air security partners, will be necessary for information sharing to establish the intent and detection of unknown, suspected, or actual airborne threats to the United States.

Halfway through 2007, the JPDO established the ISST. Periodically, the ISST met with a Review Panel comprised of representatives from DHS, DOC, DOT/FAA, DoD, and MITRE; and JPDO leadership from Enterprise Architecture and Engineering, and Policy Divisions, and the following Working Groups: Air Navigation Services, Net Centric, Security, and Weather. The ISST task was to:

- Identify high-level aviation transportation system surveillance information and capability needs as envisioned in the NextGen ConOps

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[1] Aviation transportation system as defined in the NSPD-47 / HSPD-16 and the White House released NSAS, "U.S. airspace, all manned and unmanned aircraft operating in that airspace, all U.S. aviation operators, airports, airfields, air navigation services, and related infrastructure, and all aviation-related industry."

- Identify existing agency aviation transportation system surveillance capabilities and architecture, and future surveillance system plans and needs
- Identify potential changes in how aviation transportation system surveillance capabilities might be combined to more effectively and efficiently achieve NextGen
- Identify what, if any, changes might be necessary in government planning

In mid-February 2008, the ISST completed an Interim Report which appropriately addresses the above tasking and was approved for limited release by the ISST Review Panel. The purpose of the Interim Report was to complement and help align interagency implementation activities on Action Items (AIs) resulting from the National Security Presidential Directive-47/Homeland Security Presidential Directive-16 "Aviation Security Policy." All the AIs are derived from NSPD-47/HSPD-16 activities that developed the "National Strategy for Aviation Security" (NSAS) and seven supporting plans. The Interagency Implementation Working Group, formed to complete the NSAS AIs, has approximately one-year from 26 March, 2007, to complete their activities. Of particular interest to JPDO Integrated Surveillance are AIs 102 and 103. The implementation plan for the National Strategy for Aviation Security requires coordination with JPDO on AIs 42, 102, and 103.

The ISST Interim Report's first recommendation is critical. It is the position of the ISST and Review Panel that any other recommendations resulting from ISST activities will rely on successfully establishing the first recommendation, which is described below:

Determine a formal, institutionalized interagency mechanism for responsibility, management, and ownership for elements of integrated surveillance (to include funding). Future national aviation surveillance data/information requirements must be analyzed holistically, ensuring that the responsibilities of DOT/FAA, DHS, DoD, ODNI, DOC/NOAA, and other aviation safety and security partners are addressed. National aviation surveillance requirements for 2025 must accommodate both the projected increase in the volume of aircraft operations, as well as National assessments of threats to the United States for that timeframe. Weather surveillance capabilities and requirements should be simultaneously evaluated for potential synergies. Funding responsibilities should be recommended by the NSAS Air Domain Surveillance and Intelligence Integration plan, AI 102. Management and subordinate arrangements commensurate with funding mechanisms must also be defined.

Note: ODNI's Global Maritime and Air Intelligence Integration office will be the mechanism to coordinate interagency intelligence integration.

There are many potential mechanisms that might be used to oversee Integrated Surveillance for the aviation transportation system. Options include a structure analogous to the National Executive Committee for Space-Based Positioning, Navigation, and Timing (PNT) [established by NSPD-39], rejuvenation of the North American Air Surveillance Council, the Standing Interagency Aviation Security Committee recently established under NSAS, or another arrangement. JPDO believes that any successful option will be grounded in either Presidential Directive or legislation.

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Document Revision History

VERSION	DATE	DESCRIPTION
Internal version 0.01	March 12, 2008	Briefing of initial draft concept to IC
Internal version 0.02	March 20, 2008	Initial Draft revised to accommodate Partnership Management Div template
Internal version 0.03	March 21, 2008	Revised Draft based on comments from JPDO support lead
Draft v0.1	March 28, 2008	Revised Draft based on comments from JPDO ISST Director, Doug Arbuckle
Draft v0.1	March 28, 2008	Transmitted to ISST for comment
Draft v0.2	April 3, 2008	Revised Draft based on recommended adjudicated ISST comments; transmitted to Doug Arbuckle
Draft v0.3	April 4, 2008	Revised recommended adjudicated Draft based on comments from Doug Arbuckle; sent to Partnership Management Div for editing and branding
Draft v0.4	April 14, 2008	Edited Draft based on comments from Partnership Management Div; transmitted to JPDO Integration Council (IC)
Draft v0.5	April 18, 2008	Draft revised per Doug Arbuckle
Version 1.0	April 18, 2008	Transmitted to JPDO Director
Version 1.0	April 18, 2008	Transmitted to JPDO Board
Version 1.0	May 6, 2008	Briefed paper to SPC
Version 1.0	June 24, 2008	Published on JPDO Web site
Version 1.0	July 15, 2008	Revised page 2, paragraph 1
Version 1.1	July 15, 2008	Published on JPDO Web site